A COMPARATIVE ANALYSIS OF THE FINANCIAL PERFORMANCE OF MICRO FINANCE INSTITUTIONS OF INDIA AND BANGLADESH

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by

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1. INTRODUCTION

India and Bangladesh are one of the developing countries in the world. The GDP per capita of India, though it showed improvement in recent years, is only (USD) $1058 as at end of 2009. Poverty is the major problem in these countries. In these economies, it is argued that among others absence of access to credit is presumed to be the cause for the failure of the poor to come out of poverty. Meeting the gap between demand and supply of credit in the formal financial institutions frontier has been challenging [43]. In fact, the gap is not aroused merely because of shortage of loan-able fund to the poor rather it arises because it is costly for the formal financial institutions to lend to the poor. Lending to the poor involves high transaction cost and risks associated with information asymmetries and moral hazards [39]. Nevertheless, in several developing economies governments have intervened, through introduction of microfinance institutions to minimize the gap then allow the poor access credits.

Micro-finance is one of the ways of building the capacities of the poor who are largely ignored by commercial banks and other lending institution and graduating them to sustainable self-employment activities by providing them financial services like credit, savings and insurance. The reasons of this neglect are many. Often, such credits are just not profitable enough for bank, because economies of scale. By focusing on small amounts, and easing collateral requirements, micro finance institution are better equipped to target poor individuals or groups who need resources to finance small scale investments. To provide micro-finance and other support services, MFIs should be able to sustain themselves for a long period.

Some researchers have found the evidence to be not so favorable. Many MFIs seem to have trouble reaching self sustainability at the financial level, even after the set up period. In this case, micro credit becomes more akin to subsidized credit which has a long record in developing countries, but often fails to achieve lasting positive results [29].

Still even if MFIs do not reach financial sustainability and fail therefore to conform to the "win-win" assumption, they can still be considered valuable if they provide credit facility to poor households who would not be able to find financial resources otherwise. In this perspective, outreach has social value in itself, which may more than offset the cost associated with permanent financial subsidies needed by the MFIs.

In other words, MFIs face double challenge: not only do they have to provide financial services to the poor (outreach), but they also have to cover their cost in order to avoid bankruptcy (sustainability). Both dimensions must therefore be taken into account in order to access their performance.

In India micro finance traces its roots to mid 1970s when some prominent Indian NGO like Myrada & Pradan started using the Self Help Group (SHG) model. The SHG is used as a platform for social mobilization and finance is one of the various services provided to the grassroots community through this model. It was widely replicated across other developmental NGOs. It is a community driven and managed microfinance model where the NGO plays the role of a facilitator, for instance providing capacity building services to the groups and building relationships with banks.

During the late 1990s, the Grameen model promoted by Muhammad Yonus of Grameen Bank and the ASA model promoted by the Association for social Advancement, both from Bangladesh, found rapid acceptance amongst the newer breed of microfinance institutions in India. This was due to the models' capability for rapid scaling in terms of client outreach. Also these models are less dependent on donor funds and pass the actual service charges to the clients while retaining a margin for its own growth. These models have proven to be robust revenue models. Slowly a distinct trend of shifting from non profit, grant-supported organizations to for profit institutions (non-banking financial corporations) became visible in Indian microfinance sector.

1.1 RELEVANCE AND THE OBJECTIVE OF THE STUDY:

Previous empirical studies have focused mainly on the impact assessments of microfinance Institutions in the local areas. The study undertaken looks at the issue from sustainability perspective by focusing exclusively on India and Bangladesh microfinance Institutions. Bangladesh being the pioneer in microfinance sector in South East Asia, it is imperative to compare the financial performance of MFIs in India and Bangladesh.

This study and its outcome will be a tool for the MFI to have a clear view about its current performance and risks (strengths and weaknesses). It will facilitate decision-making through the identification of improvement areas and motivate the entire institution towards performance improvement. It will also provide tool to follow up its development, assess progress in achieving sustainability and compare to its peers and present itself to potential funders.

From a donor or a supporting NGO perspective it will help to know the performance / level of sustainability of its partner and to better understand the kind of support its partner is asking for. It might also be the tool for investors to identify potential investments and to follow-up the MFIs they are investing into.

1.2 LIMITATION OF THE STUDY:

Microfinance Institutions in India is still in a nascent stage and not well regulated and therefore the financial data of most of the microfinance institutions are not available. Therefore the financial data is taken from Microfinance Information Exchange (MIX) (USA), Sa-dhan (India) and audited accounts of some of the microfinance Institutions. Second limitation is relating to the sample size. Only 88 companies from India have reported data to MIX in year ended March 2010 (financial year) and 69 companies had reported data in the year 2007-08. In case of Bangladesh the scenario is worse as only 28 companies have reported data as on 31st December, 2009. In year 2007, only 31 companies had reported data to MIX. Since the study has taken the last five year data therefore sample size could only go up to maximum 40 companies for India and 26 companies for Bangladesh.

The third limitation is relating to sampling technique. The stratified random sampling is done on the basis of the age of the microfinance institutions. The average age of Bangladesh MFIs is much higher than Indian MFIs therefore we do not find any company who is young in Bangladesh as per the life cycle approach which categorizes the MFIs on the basis of age.

Time horizon is another area of limitation as the older data is either not reported to or available by the agencies like MIX or Sa-dhan to make a proper trend analysis.

2. LITERATURE REVIEW:

The research aims at analyzing the performance of Indian MFIs and comparing it with the performance of Bangladesh MFIs. It also aims at establishing the relationship between sustainability and other financial indicators and develops a more comprehensive model for financial sustainability. This section on literature review is focused on various models and studies that are relevant to our research.

The review of the literature is organized into various schools of thoughts on microfinance sustainability and performance evaluation model of microfinance sector which are discussed as follows:

2.1 THEORETICAL FRAMEWORK:

The concept of Microfinance has influenced by two major schools; the Institutional school and the Welfarist school. Institutionalise schools focuses on developing a financially sustainable institution in order to serve the poor. The issue of providing financial services to poor is the basic foundation of this approach. Numerous large-scale, profits seeking Micro Finance Organisations come under this approach that provides high quality financial services to the poor. The institutionalise position is expressed in nearly all literature published by World Bank, CGAP, USAID, ACCION[1] International and Ohio State Universities Rural Finance program.

Believers of Institutionalise approach are opposed to the idea of dependency on subsidies because earlier attempts on poverty alleviation through subsidies credit by development agencies, NGO and the governments of developing countries failed. The reason behind this failure includes; high cost of transactions, lack of assets for the poor house holds, institutions lacking in saving mobilization and high level of corruption. The impact was so insignificant and that leads the dried up donor fund.

According to Institutionalist, a significant impact on poverty can be achieved only if MFIs are financially self-sufficient and independent from any subsidise funding from donor or government.

[1] ACCION International is a private, nonprofit organization providing “micro” loans, business training and other financial services to poor men and women who start their own businesses

Examples of MFIs operate under this approach includes; Bank Rakyat Indonesia, SKS Microfinance, Uganda Microfinance Union etc.

On the other hand, Welfarist focuses on immediate improvement of the economic safety for the poor. They focused on providing financial services to the poorest of the poor at subsidized rate of interest. MFIs that fall under this approach are heavily reliant on government subsidies and grants as well as donor subsidies. Saving mobilization is not a part of the lending process in this approach.

Though they are understand and aware that the long term sustainability of MFI is very important, they do not agree that avoiding donor subsidies completely will be required to achieve that state. Examples of MFIs operating under this approach includes Grameen bank Bangladesh, FINCA in Latin America etc.

2.2 PERFORMANCE EVALUATION MODELS FOR MFIS:

During the 1990s, there was a growing interest on the part of financial institutions in microfinance. As a result, several performance evaluation indicators emerged in relation to different areas of management considered as the most important in evaluating performance of MFIs. The results achieved were diverse. In actuality some models of evaluation were generally accepted and have been currently adopted by institutions to monitor and evaluate the business. Each of these models focused on specific profiles of analysis. These models contribute to raising the level of informative transparency with regard to the process of credit management of MFIs.

PEARLS Model (1990) from the World Council of Credit Unions[2].

P- Protection

E- Effective Financial Structure

A- Asset Quality

R- Rate of Return and Costs

L- Liquidity

[2] World Council of Credit Unions (WOCCU) started by Franz Hermann Schulze-Delitzsch established the first credit unions in the 1850s in Germany to give those lacking access to financial services the opportunity to borrow from the savings pooled by themselves and their fellow members. The mission of World Council of Credit Unions (WOCCU) is to be the world's leading advocate, platform, development agency and good governance model for credit unions.

S- Sign of Growth

PEARLS model is a system of 45 indicators used for monitoring the performance of a specific type of microfinance institution: credit unions.

CAMEL Model (1993) from ACCION International.

C- Capital adequacy

A- Asset quality

M- Management

E- Earnings

L- Liquidity

It is a system of 21 indicators currently utilized by North American banks to evaluate performance, focusing principally on the financial aspects of management.

GIRAFE model (1999) from Planet Rating[3]

G- Government and decision making

I- Information and management tool

R- Risk analysis and control

A- Activities and loan portfolio

F- Financing: Equity and liability

E- Efficiency and profitability

It is an instrument of qualitative and quantitative evaluation of performance and of the risks born by the MFI. The qualitative analysis focuses on the success of the strategy verifying the quality of management processes and the efficiency of the information system with the objective of guaranteeing the internal control functions.

Microfinance Information Exchange model: Through its publication- Micro Banking Bulletin that is one of the principal outputs of Micro banking standards project funded by CGAP, it collects financial and portfolio data provided by MFIs, primarily to help MFI managers and board

[3] Planet Rating, headquartered in Paris, France, is a specialized microfinance rating agency offering evaluation and rating services to microfinance institutions (MFIs), using the GIRAFE and the Social Performance methodologies. Planet Rating was created in 1999 as a department of the international NGO PlaNet Finance in order to accompany the tremendous development of microfinance services and bring the transparency that was needed to harness the growth of the sector.

members to understand their performance vis-a-vis other MFIs. Secondary objective includes establishing industry performance standards and enhance transparency of financial reporting of MFIs world wide. There are 8 broad parameters included in this model namely

1 Institutional characteristics
2 Financing Structure
3 Outreach Indicators
4 Macroeconomic Indicators
5 Overall Financial Performance
6 Revenues and Expenses
7 Efficiency
8 Risk and liquidity

2.3 MIX MODEL FOR PERFORMANCE EVALUATION:

MIX is a non profit organization incorporated in June 2002, with headquarters in Washington, DC, and regional offices in Peru, Senegal, India and Indonesia. MIX was founded by CGAP (Consultative Group to Assist the Poor), and is sponsored by City Foundation, Deutsche Bank Americas Foundation, IFAD, Bill & Melinda Gates Foundation.

MIX provides detailed financial and social performance information from microfinance Institutions (MFIs), as well as business information from market facilitators and leading donor organizations and investors in microfinance. To address the issue of diversity in operating environment of MFIs, while comparing the financial and portfolio data, it has adopted a peer group framework, where financial performance of MFIs are compared among peer group members on 8 broad parameters. Each of these parameters has some performance indicators. The details of these indicators are as under.

1. Institutional characteristics: The details of the indicators under this head are as under.

- Number of MFIs: Sample size of group
- Age: Years functioning as an MFI

  Number of offices

  Number of personnel

  Total asset: Total assets, adjusted for inflation and standardized provisioning for loan impairment and write-offs

2. Financing Structure: The indicators includes

- Capital/Asset Ratio: Adjusted Total Equity/Adjusted Total Assets
- Commercial Funding Liabilities ratio: (Voluntary and Time Deposits + Borrowings at Commercial Interest Rates) /Adjusted Average Gross Loan Portfolio.
- Debt to Equity: Adjusted Total Liabilities/Adjusted Total Equity.
- Deposits to Loans: Voluntary Deposits/Adjusted Gross Loan Portfolio
- Deposits to Total Assets: Voluntary Deposits/Adjusted Total Assets
- Portfolio to Assets: Adjusted Gross Loan Portfolio/Adjusted Total Assets

3. Outreach Indicators: Indicators in this area includes

- Number of Active Borrowers: Number of Borrowers with loans outstanding, adjusted for standardized write- offs
- Percent of Women Borrowers: Number of active women borrowers/Adjusted Number of Active Borrowers
- Number of Loans Outstanding: Number of Loans Outstanding, adjusted for standardized write-offs
- Gross Loan Portfolio: Gross Loan Portfolio, adjusted for standardized write-offs
- Average Loan Balance per borrower: Adjusted Gross Loan Portfolio/Adjusted Number of Active borrower
- Average Loan Balance per Borrowers/ GNI per capita: Adjusted Average Loan Balance per Borrower/GNI per Capita
- Average Outstanding Balance/Adjusted Gross Loan Portfolio/Adjusted Number of Loans Outstanding
- Average Outstanding Balance/GNI per Capita: Adjusted Average Outstanding Balance/GNI per Capita
- Number of Voluntary Depositors: Number of Depositors with voluntary deposit and time deposit accounts
- Number of Voluntary Deposit Accounts: Number of Voluntary Deposit and time deposit accounts
- Voluntary Deposits :Total value of Voluntary Deposit and time deposit accounts
- Average Deposit Balance per Depositor: Voluntary Deposits/Number of Voluntary

Depositors

- Average Deposit Balance per Depositor/GNI per Capita: Average Deposit Balance per Depositor/GNI per capita
- Average Deposit Account Balance: Voluntary Depositors/Number of Voluntary Deposit Accounts
- Average Deposit Account Balance/GNI per Capita: Average Deposit Account Balance/GNI per capita

4. Macroeconomic Indicators: The indicators are as under

- GNI per Capita : Total income generated by a country's residents, irrespective of location / Total number of residents
- GDP Growth Rate: Annual growth in the total output of goods and services occurring within the territory of a given country
- Deposit Rate: Interest rate offered to resident customers for demand, time or savings deposits
- Inflation Rate: Annual change in average consumer prices
- Financial Depth: Money aggregate including currency, deposits and electronic currency (M3)/GDP

5. Overall Financial Performance: The indicators are as under

- Return on Assets: (Adjusted Net Operating Income - Taxes) / Adjusted Average Total Assets
- Return on Equity: (Adjusted Net Operating Income - Taxes) / Adjusted Average Total Equity
- Operational Self-Sufficiency: Financial Revenue / (Financial Expense + Impairment Losses on Loans + Operating Expense)
- Financial Self-Sufficiency: Adjusted Financial Revenue / Adjusted (Financial Expense + Impairment Losses on Loans +Operating Expense)

6. Revenue and Expenses: The indicators under this head are as under

- Financial Revenue/Assets: Adjusted Financial Revenue / Adjusted Average Total Assets
- Profit Margin: Adjusted New Operating Income / Adjusted Financial Revenue

- Yield on Gross Portfolio (nominal): Adjusted Financial Revenue from Loan Portfolio / Adjusted Average Gross Loan Portfolio
- Yield on Gross Portfolio (real): (Adjusted Yield on Gross Portfolio (nominal) - Inflation Rate) / (1 + Inflation Rate)
- Total Expense/Assets : Adjusted (Financial Expense + Net Loan Loss Provision Expense + Operating Expense) / Adjusted Average Total Assets
- Financial Expense/Assets: Adjusted Financial Expense / Adjusted Average Total Assets
- Provision for Loan Impairment/Assets: Adjusted Impairment Losses on Loans / Adjusted Average Total Assets
- Operating Expense/Assets: Adjusted Operating Expense / Adjusted Average Total Assets
- Personnel Expense/Assets: Adjusted Personnel Expense / Adjusted Average Total Assets
- Administrative Expense/Assets: Adjusted Administrative Expense / Adjusted Average Total Assets
- Adjustment Expense/Assets : (Adjusted New Operating Income - Unadjusted Net Operating Income) / Adjusted Average Total Assets

7. Efficiency: The indicators under this includes

- Operating Expense/Loan Portfolio: Adjusted Operating Expense / Adjusted Average Gross Loan Portfolio
- Personnel Expense/Loan Portfolio: Adjusted Personnel Expense / Adjusted Average Gross Loan Portfolio
- Average Salary/GNI per Capita: Adjusted Average Personnel Expense / GNI per Capita
- Cost per Borrower: Adjusted Operating Expense / Adjusted Average Number of Active Borrowers
- Cost per Loan: Adjusted Operating Expense / Adjusted Average Number of Loan
- Borrowers per Staff Member: Adjusted Number of Active Borrowers / Number of Personnel
- Loans per Staff Member: Adjusted Number of Loans Outstanding / Number of Personnel
- Borrowers per Loan Officer: Adjusted Number of Active Borrowers / Number of Loan Officers
- Loans per Loan Officer: Adjusted Number of Loans Outstanding / Number of Loan

Officers

- Voluntary Depositors per Staff Member: Number of Voluntary Depositors / Number of Personnel
- Deposit Accounts per Staff Member: Number of Deposit Accounts / Number of Personnel
- Personnel Allocation Ratio: Number of Loan Officers / Number of Personnel

8. Risk and Liquidity: The indicators under this includes

- Portfolio at Risk > 30 Days: Outstanding balance, portfolio overdue > 30 days + renegotiated portfolio / Adjusted Gross Loan Portfolio
- Portfolio at Risk > 90 Days: Outstanding balance, portfolio overdue > 90 days + renegotiated portfolio / Adjusted Gross Loan Portfolio
- Write-Off Ratio: Adjusted value of loans written off / Adjusted Average Gross Loan Portfolio
- Loan Loss Rate: (Adjusted Write-offs - Value of Loans Recovered) / Adjusted Average Gross Loan Portfolio
- Risk Coverage Ratio: Adjusted Impairment Loss Allowance / PAR > 30 Days
- Non-earning Liquid Assets as a % of Total Assets: Adjusted Cash and Banks/ Adjusted Total Assets
- Current Ratio: Short Term Assets / Short Term Liabilities

2.4 EMPIRICAL LITERATURE REVIEW:

Yeron in 1992 discussed that the two most important objectives for a rural financial institutions to be successful are financial self-sustainability and more outreach to the target rural population. Financial self-sustainability is said to be achieved when the return on equity, net of any subsidy received, equals or exceeds the opportunity cost of funds.

On the other hand, outreach is assessed on the basis of the type of clientele served and the variety of financial services offered; including the value and number of loans extended, the value and number of saving accounts, the number of branches and sub-branches, percentage of total rural population served, the real annual growth of the rural financial institutions' assets over recent years and the participation of women clients.

Sustainability relates to the ability of a program to continuously maintain its activities and services in order to meet its objectives.

According to Khandker et al. (1995) the concept of sustainability of micro finance can be divided into four interrelated ideas; namely, financial viability, economic viability, institutional viability and borrower viability. Financial viability relates to the fact that a lending institution should at least equate the cost per each unit of currency lent to the price it charges its borrowers (i.e. the interest rate). Economic viability relates to meeting the economic cost of funds (opportunity cost) used for credit and other operations with the income it generates from its lending activities.

Institutional viability is related more to efficient management and decision-making process.

Borrower viability however, refers to whether the borrowers of the institution have achieved higher flows of income over time and is able to repay back their loans. It is this concept of sustainability (in addition to financial sustainability) that is given more emphasis in this study.

Performance Evaluation of MFIs, TRIAS Training session, Brussels, January 2005 focuses on basics of performance evaluation. The main financial indicators discussed in this session were Portfolio quality, Efficiency and Productivity, Financial management / Risk management and Profitability and sustainability. A case of PILARH was taken and the above mentioned indicators were studied. It also discusses how to react when the portfolio deteriorates.

In the year 2006, Giovanni Ferro Luzzi and Sylvain Weber in their paper "Measuring the performance of Micro Finance Institution" use factor analysis to construct performance indices based on several possible associations of variables without posing too many a priori restriction. The base variables are thus combined to produce different factors, each one representing a distinct dimension of performance. Then they use the individual scores ascribed to each MFI on each factor as the dependent variables of a simultaneous equation model and presents new evidence on the determinants of MFIs performance.

In the year 2006, Yogendra Prasad Acharya, Uma Acharya in their paper "Sustainability of Microfinance Institutions from Small Farmer Perspective: A Case of Nepal" demonstrate that small farmers generally do not think in terms of 'institutional' sustainability when they obtain loans from cooperatives. They define the term 'sustainability' in terms of personal benefits. Their frames of reference are more utility-focused and directly connected to their lives and livelihood, the level of benefit, income, and economic survival of the family. In other words, what is sustainability for a banker is not so for the small farmers.

In the year 2007, J. Jordan Pollinger, John Outhwaite and Hector Cordero-Guzman in their paper "The Question of Sustainability for Microfinance Institutions" seeks to understand the implications for providers of "microfinance" in pursuing relationship-based financing strategy in the US. , analyzes their lending process, and present a model for determining the break-even price of a micro credit product. They found that credit is generally being offered at a range of subsidized rates to micro entrepreneurs. Such subsidization of credit has implications for the long-term sustainability of institutions serving this market and can help explain why mainstream financial institutions have not directly funded micro enterprises.

In November, 2007, Befekadu B. Kereta in his paper "Outreach and Financial Performance Analysis of Microfinance Institutions in Ethiopia" finds that in Ethiopia the industry's outreach rises in the period from 2003 to 2007 on average by 22.9 percent. It identified that while MFIs reach the very poor; their reach to the disadvantages particularly to women is limited (38.4 Percent). From financial sustainability angle, it finds that MFIs are operational sustainable measured by return on asset and return on equity and the industry's profit performance is improving over time. Similarly, using dependency ratio and Non-performing Loan (NPLs) to loan outstanding ratio proxies the study also finds that MFIs are financial sustainable. Finally, it finds no evidence of trade-off between outreach and financial sustainability.

A survey by Robert cull and others on the performance of leading MFIs in 49 countries finds interesting results. It founds over half of surveyed MFIs are profitable after making adjustment of subsides. It also identified no evidence of trade off between being profitable and reaching the poor.

SM Rahman, Director, CDF, Dhaka, Bangladesh in his paper "Commercialization of Microfinance in Bangladesh perspective" suggests that real customer service through commercialization should be the bottom line for moving forward. In a competitive environment, customer satisfaction and commercialization should be the driving force for survival and growth. According to him the microfinance regulation in the country is now underway, which will provide a legal basis and streamline the current and future MFI activities. To reap the benefits of commercialization, the clients should be allowed to exercise their free choices. They should be granted liberty to do their own financial management in order to increase their net worth, while the financial intermediaries will require mandate for providing a wide range of financial operations.

For the Indian case, there are few studies undertaken in relation to MFIs. But, the objectives addressed in these previous studies are different, insuring the value added of this study.

Vijay Mahajan and G Nagasri, BASIX (1999) tried to examine what comes in the way of making Indian MFIs sustainable and what can facilitate this. An attempt has been made in this paper to look at sustainability from multiple dimensions such as demand, mission, legal and regulatory framework, ownership, governance and human resources and financial sustainability.

Piyush Tiwari and S.M. Fahad discuss conceptual framework of a microfinance institution in India. The successes and failures of various microfinance institutions around the world have been evaluated and lessons learnt have been incorporated in a model microfinance institutional mechanism for India. Author finds that the poor repay their loans and are willing to pay for higher interest rates than commercial banks provided that access to credit is provided. Secondly, the poor save and hence microfinance should provide both savings and loan facilities. These two findings imply that banking on the poor can be a profitable business. However, attaining financial viability and sustainability is the major institutional challenge.

The micro finance institutions participation in several developing economies is escalating from time to time. Various studies on different countries on the performance of the MFIs confirm this (Adongo and Stork 2005, Zeller and Meyer 2002, Meyer 2002, Robert cull et al. 2007).

For example, in Bangladesh a microfinance institution called Grameen Bank at the end of 2008 reported 6.2 million members, where 95 percent of them are women, with $642 million outstanding loan. In addition, Thailand also has reported impressive outreach through agricultural lending by the Bank for Agriculture and Agricultural Cooperative (Meyer 2002). In general, a lot number of microfinance institutions have registered impressive outreach in several developing economies including India, Cambodia, and others (Meyer 2002).

As per IFC Report June 2008 “India: Microfinance and Financial Sector Diagnostic Study” Nominal interest rates in India range between 12 and 16 percent a year. The annual effective interest rate paid by the average Indian microfinance borrower is, on average, around 25 percent—not significantly different from the approximately 24 percent usually charged by commercial banks on consumer finance. Strikingly, MFIs charge flat interest rates, whereas SHGs linked to banks are charged on a declining balance basis.

An analysis of 83 MFIs by Sa-Dhan in 2006 documented that the return on their gross loan portfolios (GLP) ranged from -2.3 percent to +2.4 percent, depending on an MFI’s organizational

form. Cooperative MFIs posted the highest return (+2.4 percent), followed by NBFCs (+0.9 percent) and nonprofit companies (-2.3 percent). MFI cooperatives also achieved the highest return on equity (+6.5 percent), followed by NBFCs (+5 percent) and nonprofit organizations (-18.6 percent).

India lags well behind Bangladeshi microfinance institutions reporting to the MIX, which lead the region in profitability. The financial viability of Indian MFIs is also under pressure, despite yield improvements. Low portfolio yields, combined with poor portfolio quality and rising financial costs, have reduced Indian MFI surpluses even though improvements in collection measures have boosted portfolio yields (Ghate, Gunaranjan, and Majahan, 2008, "Urban Micro Enterprises.")

3. RESEARCH OBJECTIVES:

The study is focused on achievement of following three objectives:

1. To analyze the financial performance of Indian MFIs and compare it with the MFIs of Bangladesh.

a) To compare the financial performance of Indian MFIs and the MFIs of Bangladesh.

b) To analyze the financial performance of NGO form of Indian MFIs and compare it with NBFC form of Indian MFIs.

c) To compare the financial performance of Indian MFIs age wise.

2. To establish the trade off between the Sustainability and other financial performance indicators like Outreach, Efficiency, Liquidity, and Asset Quality.

3. To study the models of financial performance of MFIs with a view to suggest a new model for financial sustainability index.

4. RESEARCH METHODOLOGY:

In this section a brief overview of various dimensions of the research, tools and techniques and methods used to achieve various research objectives has been discussed.

4.1 THE DATA AND SAMPLE

The study is focused on two countries India and Bangladesh.

INDIA:

Home to 1.2 billion people as of 2010, India constitutes approximately one sixth of the world's total population. It is the world's largest democracy and a key emerging market alongside China and Brazil. India is the world's tenth largest economy with a gross domestic product in 2009-10 of US$1310 billion as reported by the World Bank. The country's growth is also strong, with real GDP growing in by 7.2% in 2009-10 and exports touching US$ 200 billion in the same period. The picture presented shows an environment where wealth is increasing for the nation but it is not accruing to all citizens.

Microfinance is one development approach that can contribute to achieving the national and international goal of improving the livelihoods of those Indians that are not yet seeing the benefits of growth. Therefore it is important to see whether theses institutions are sustainable in the long run or not.

BANGLADESH:

Bangladesh has made significant strides in its economic sector since independence in 1971. However, Bangladesh's poverty rate remains high, with nearly half of its 147 million people living below the poverty line. GDP is US $ 89 billion and growing at 6% in the year 2009. The per capita income is US $ 1300 in the same period.

Bangladesh has been the pioneer in the field of microfinance movement and a significant contribution to the development of the country has been made by the several MFIs. Grameen Bank, BRAC, ASA and Prashika are some of them.

Today Bangladesh is the home to the most extensive microfinance operations in the world. Starting from the resource of few pennies and with the clients in double digit counts, microfinance movement gained such a momentum that it has not only made great strides in Bangladesh in delivering financial services to the poor , specially women, but also has become a pioneer in the developing world. Therefore it is interesting to compare the financial performance

of the above mentioned countries on various financial indicators and to see where they stand against each other.

THE DATA:

The research is analytical and empirical in nature and makes use of secondary data. The data has been sourced from Microfinance Information Exchange and audited accounts of MFIs. The sample period undertaken for study of each objective is from the year 2005-06 to 2009-10. For the third objective, the data is taken for the year 2009-10.

THE SAMPLE:

A comparative analysis of the financial performance has been done by taking a sample of companies reporting to Microfinance Information Exchange. The financial data on 26 microfinance institutions (MFIs) of India and 26 microfinance institutions of Bangladesh have been collected. The list of the sample companies has been appended to the appendices (APENDIX-A).

The institutions have been selected based in large part on the quality and extent of their data. At the same time due care have been taken to see that the sample can represent the whole set of MFIs in India and Bangladesh. The Stratified Random Sampling is chosen based on the age of MFIs. As has been suggested by life cycle approach, the age less than ten years are considered as Young MFIs, age between 10 years and 15 years are considered as Mature and the age more than 15 years are considered as Old MFIs for both India and Bangladesh.

An important feature of our data is qualitative information on the legal form employed by the MFI and profit status. These detailed data enable us to offer a more complete analysis of MFIs performance. For analyzing the financial performance of NGO MFIs and NBFC MFIs of India the sample size of 20 for NGO MFIs and 20 for NBFC MFIs have been taken. Similarly 14 young MFIs, 14 Mature MFIs and 12 Old MFIs sample have been chosen to analyze the performance of MFIs of India age-wise.

4.2 MODELS AND TECHNIQUES

For the conduct of the study, MIX model for performance evaluation has been used. This section discusses the model and various tools and techniques used to carry out the research.

Financial Indicators to be used for financial performance evaluation:

1. Financing Structure:

a) Capital/Assets ratio

2. Outreach indicators

1. Number of active borrowers
2. Percentage of Women borrowers

3. Overall Financial Performance indicators

a) Return on assets

b) Return on equity

a) Operational self sufficiency

4. Revenue and Expenses indicators

a) Yield on gross portfolio

5. Efficiency indicators

a) Operating expense/loan portfolio

b) No. of active clients per staff member

6. Risk and Liquidity indicators:

a) Portfolio at risk> 30 days

TWO SAMPLE INDEPENDENT t – TEST: To compare the performance of MFIs of India and Bangladesh the t-test has been used for hypothesis testing. Levene's Test for Equality of Variances under t-test is used for the same. Hypothesis is created as under:

H0: There is no difference in the performance indicators of India and Bangladesh

H1: There is a difference in the performance indicators of India and Bangladesh

Similarly, the performance of NBFC and NGO forms of Indian MFIs has been conducted using Levene's Test for Equality of Variances.

ONE WAY ANOVA: To compare the performance of MFIs of India age-wise, One Way ANOVA is used. Further to test the hypothesis, Tukey HSD test for multiple comparisons is implemented.

MULTIPLE LINEAR REGRESSION ANALYSIS:

To understand the relationship between sustainability and performance indicators a Multiple Linear Regression analysis is carried out in respect of Indian MFIs and Bangladesh MFIs for data of 5 years i.e. from 2005-06 to 2009-10.

A multiple regression equation can be expressed as:

$$Y = \alpha i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} + \beta_8 X_{8it} + \varepsilon_i \text{ ---------- (1)}$$

Where: Y= dependent variable {(Operational Self Sufficiency (OSS) in percentage for firm 'i' during time period't'), αi = Constant, β_1= Regression coefficient of Capital/Assets ratio

X_{1it} = Independent variable Capital/Assets ratio for firm 'i' during time period't'

β_2 = Regression coefficient of Number of active borrowers

X_{2it} = Independent variable Number of active borrowers for firm 'i' during time period't'

β_3 = Regression coefficient of Yield

X_{3it} = Independent variable Yield firm 'i' during time period't'

β_4 = Regression coefficient of Operating expense/loan portfolio

X_{4it} = Independent variable Operating expense/loan portfolio for firm 'i' during time period't'

β_5 = Regression coefficient of Portfolio at risk> 30 days

X_{5it} = Independent variable Portfolio at risk> 30 days for firm 'i' during time period't'

β_6 = Regression coefficient of Women borrowers

X_{6it} = Independent variable Women borrowers for firm 'i' during time period't'

β_7 = Regression coefficient of Debt Equity ratio

X_{7it} = Independent variable Debt Equity ratio for firm 'i' during time period't'

β_8 = Regression coefficient of Inception

X_{8it} = Independent variable Inception for firm 'i' during time period't'

ε_i = Error term

In order to develop the financial sustainability index model, the outcome of Multiple Regression Analysis is used along with scaling and weighted average.

5. ANALYSIS AND FINDINGS:

5.1 OBJECTIVE-1:

The independent two sample t- test (refer APPENDIX-B, B.1) shows that India is better as compare to Bangladesh on Active Borrower, Portfolio at Risk, Return on Equity, Yield, Operating Expenses to Loan portfolio and Borrowers per staff member indicators while Bangladesh is better on Women borrowers and Capital to assets ratio indicators. There is no difference found between the performance of Indian MFIs and Bangladesh MFIs at 5% significance level on Return on assets and OSS indicators.

Independent two sample t- test of NBFC and NGO (refer APPENDIX-C, C.1) shows that there is a significant difference between the performance of Indian NBFC MFIs and Indian NGO MFIs at 5% significance level on Return on Equity, Active borrowers, Women borrowers and Capital to asset ratio. The NBFC form of MFIs is doing better in all four indicators as compare to NGO form of MFIs.

The One Way ANOVA (refer APPENDIX - D and APPENDIX -E) shows that at 5% significance level, young MFIs are doing better than Mature and Old MFIs in outreach, Yield, Capital to Asset ratio and Portfolio at Risk indicators. While Mature MFIs are better in Operating expenses to loan Portfolio, productivity and sustainability indicators and Old MFIs are better in Women borrowers' indicator.

5.2 OBJECTIVE-2:

Multiple Linear Regression (refer APPENDIX -F) shows that the factors that affect the sustainability of Indian MFIs are Operating expenses to loan portfolio, Yield, capital to asset ratio and active borrowers.

The constant is 106.8 and the coefficients of various indicators are as under

1. Operating expenses to loan portfolio is -2.78.
2. Yield is 1.91.
3. Capital to asset ratio is 0.705 and
4. Active borrower is 0.006.

As can be seen from APPENDIX –F that there is no case of multi co linearity in the data and the error term is also normally distributed (refer Figure-5.1)

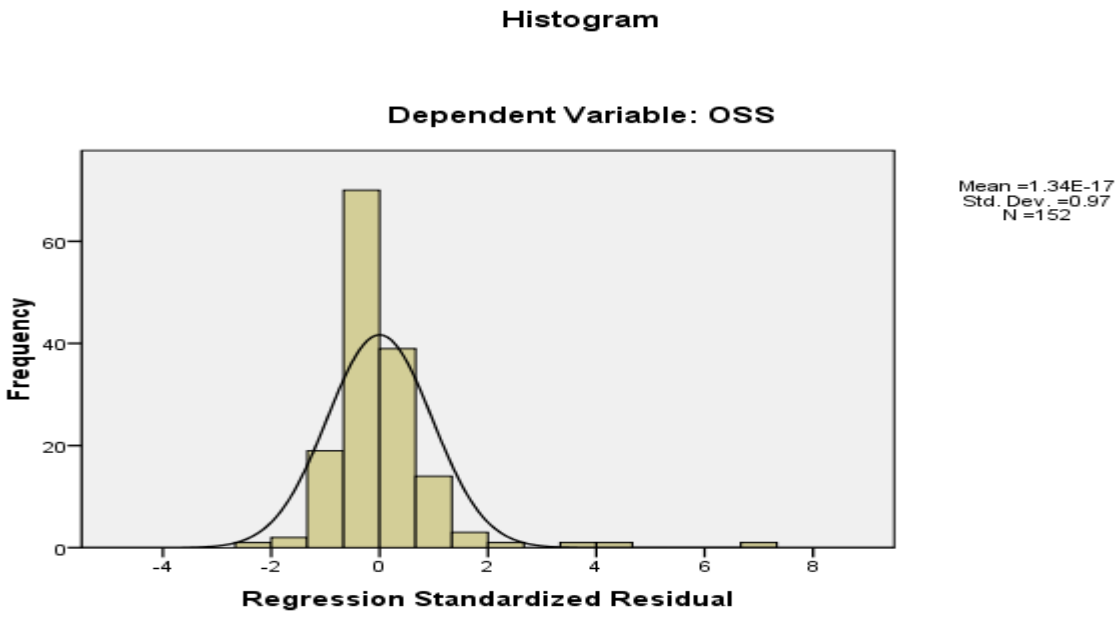

Figure-5.1: Histogram

Results of Multiple Linear Regression (refer APPENDIX -G) shows that the factors that affect the sustainability of Bangladesh MFIs are Operating expenses to loan portfolio, capital to asset ratio and portfolio at risk.

The value of R square shows that 59% of the variation in OSS is explained by independent variable. The value of constant is 70.9, while the coefficients of various independent variables are as under:

1. Operating expenses to loan portfolio is -1.46
2. Capital to asset ratio is 0.77
3. Portfolio at risk is -0.49

The portfolio yield of Indian MFIs has increased significantly from 21% (around 2006) to 24.6% in 2009-10 (refer Figure-5.2 and Figure-5.3). This has happened largely because of changes in fees charged and sometimes on account of a change in the loan term. Nevertheless, the average yield earned by MFIs in India is still lower than the Asian and global mean of 29.1% and 31.1% respectively. However, the average (OELP) has declined dramatically over the past few years from

around 15% in the year 2005-06 to just 10.5% in 2009-10. These expense ratios are well below the global mean of 20.0% and Bangladesh mean of 14.5% in the year 2009-10.

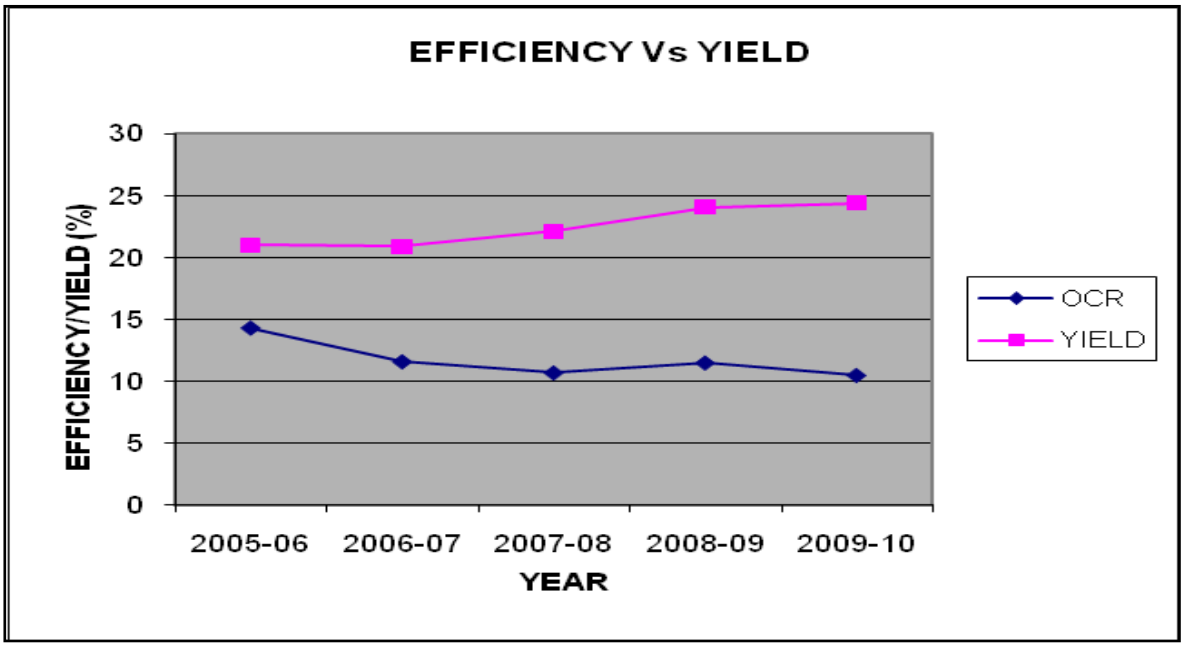

Figure-5.2: Efficiency Vs Yield of Indian MFIs

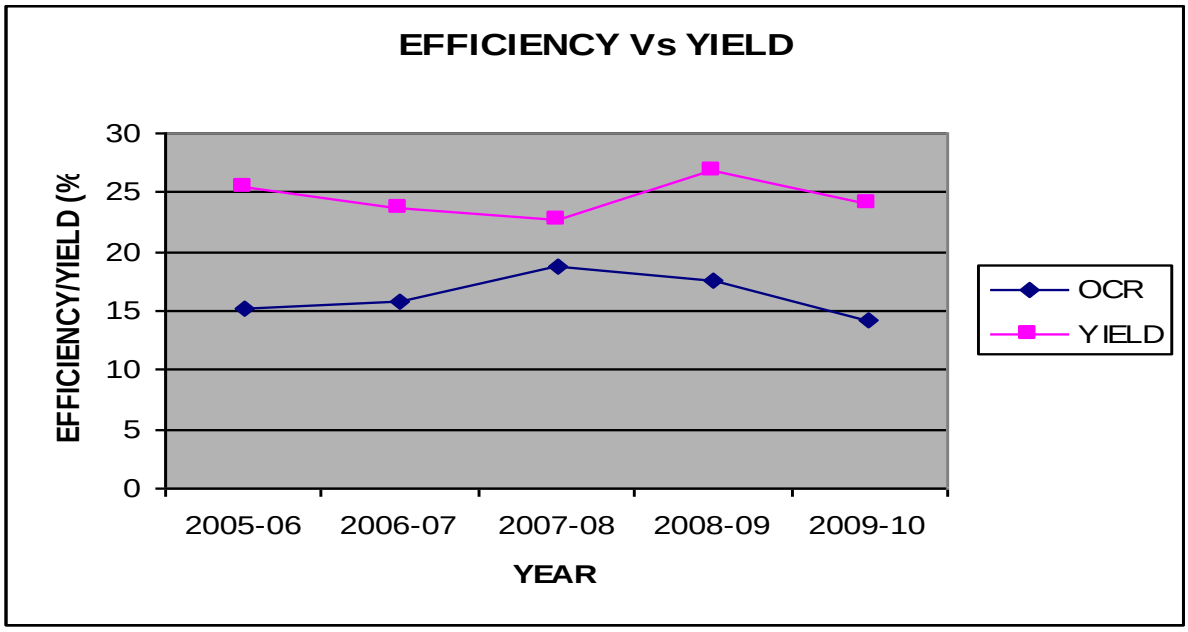

Figure-5.3: Efficiency Vs Yield of Bangladesh MFIs

5.3 MODEL FOR FINANCIAL SUSTAINABILITY INDEX:

Different literatures noted that financial sustainability is one of the areas that we need to look at to assess the performance of micro finance institutions.

Operational Self Sufficiency (OSS), an indicator of sustainability, measures the ability of an MFI to meet all its operational and financial costs out of its income from operations. Financial Self Sufficiency (FSS) measures the extent to which its income from operations covers operating costs after adjusting for all forms of subsidy, loan loss provisioning and the impact of inflation. The FSS is an approximate indicator of the impact of subsidies on an organization's sustainability. In an environment where grants represent less than 1% of the sources of funds of MFIs the FSS calculation is no longer relevant. Since profit rates are also running at quite high levels and very few MFIs are now making losses, the OSS too is not a very interesting indicator. All MFIs understand that they should not need subsidies in today's commercial environment and appreciation of the accounting treatment of grants of various sorts is nearly universal. Therefore the need was felt to develop a more comprehensive model for financial sustainability indicator and Financial Sustainability Index for a Microfinance Institutions of the country.

The model for financial sustainability index is developed by using four financial indicators. These are

Indicator-1 Portfolio at risk>30 days Past Due

Formula: Unpaid principal balance of past due loans (with overdue > 30 days) / Total Gross outstanding portfolio

Standard: PAR > 30 days at less than 10%

Indicator-2 Capital to Asset Ratio

Formula: Capital / Total Assets

Standard: Capital Adequacy at more than 15%

Indicator-3 Operating expense/loan portfolio

Formula: Total Operating Cost / Average outstanding Portfolio

Standard: Operating cost ratio at less than 20%

Indicator-4 Operational Self sufficiency

Formula: Operating income (Loans + Investment) / Operating Cost + Loan Loss Provisions + Financing Cost

Standard: Operating Self- sufficiency at 100%

The standards of each of the above parameters are taken from secondary source ACCION, RBI and Sa-Dhan.

These indicators have been chosen based on literature review and the results of regression analysis of factors affecting sustainability of Indian MFIs and Bangladesh MFIs.

In the second step, a weight will be assigned to each of these financial indicators. The weight, which is shown in Table-5.1, has been assigned analyzing the importance of indicators used by different microfinance research agencies (refer APPENDIX-H) worldwide.

It has been found, as shown in APPENDIX-H , that the indicator PAR> 30 days is most important as it is used by all 6 agencies similarly the other indicators like Capital to Assets ratio and Operational Self Sufficiency have got the least importance as four out of 6 agencies uses these indicators for the financial performance.

Table-5.1: Weight for the Indicators

S. No.	Indicators	No. of agencies using	Final weight
1	PAR>30 days past due	6	0.32
2	Capital to Assets ratio	4	0.21
3	Operational Self sufficiency	4	0.21
4	Operating expense/loan portfolio	5	0.26

In the third step, each indicator has been given a range. These indicators have to be converted into same scale so that a common measurable score, based on the financial performance of any MFI, may be given to each of these indicators for a particular year. The score of standards of each indicator has also been calculated based on the scale and shown in Table-5.2.

Table-5.2: Indicators Range and standard:

Indicators	Range	Standards	Score of Standards
PAR>30 days	0 – 100 %	Less than or equal to 10%	90
Capital to Assets ratio	0 – 100 %	More than or equal to 15 %	15
Operational self sufficiency	0 - 200 %	Above 100%	50
Operating expense/loan portfolio	0 – 100 %	Less than or equal to 20%	80

In the fourth step, the total score of the standards is calculated by multiplying its weight with its score and adding it. The total score of the standards is considered as sustainability index for the base year.

Total score of the standards = 90*W (PAR) +15* W (C/A ratio) + 80*W (Operating expenses/ loan portfolio) + 50* W (OSS)

= 90*0.32+15*0.21+80*0.26+50*0.21 = 63.25 (score for the sustainability index for the base year 2010), Where W: weight

In the final step the sustainability score for Indian MFIs for the year 2010 using the sustainability index model is calculated. Top 10 MFIs of India, which contributes 80% of the total loan portfolio, have been taken for the calculation of sustainability index (refer APPENDIX- I). The weight has been assigned to each of these companies based on their Gross Loan Portfolio. The weighted averaged sustainability index comes out to be 75.34 for the year 2010.

Checking the financial sustainability of SKS Microfinance Ltd. And SEWA Bank using the sustainability index model: In order to check the validity of the sustainability index model**,** the model is implemented on two companies namely SKS Microfinance (NBFC having a good financial performance in the last few years) and SEWA Bank (a Bank having poor performance in the recent past)

Financial data for the indicators included in the index formation for these two micro finance companies (NBFC and Bank) have been shown in Table-5.3.

Table-5.3: Data on SKS Micro finance (NBFC) and SEWA Bank for Year 2009-10.

Name of the indicators	**SKS Micro finance**	**SEWA Bank**
PAR> 30 days (%)	0.22	17.5
Capital to Assets ratio (%)	23.7	17.2
Operating expense/loan portfolio (%)	10.1	15.6
Operational Self Sufficiency (%)	150	107

The average data of these indicators of two companies will be converted into common measurable score. This has been shown in the Table-5.4.

Table-5.4: Score of the indicators for the standards and MFIs

Indicators	**Score of Standards**	**Score of SKS**	**Score of SEWA**
PAR> 30 days	90	99.8	82.5
Capital to Assets ratio	15	23.7	17.2
Operating expense/loan portfolio	80	89.9	84.4
Operational Self Sufficiency	50	75	53.5

Now the sustainability score can be calculated using the sustainability index model.

Sustainability score of SKS micro-finance is:

0.32*99.8+0.21*23.7+0.26*89.9+0.21*75= 76

Sustainability score of SEWA is:

0.32*82.5+0.21*17.2+0.26*84.4+0.21*53.5= 63.1

From the above sustainability score of two companies, it can be concluded that SKS microfinance is financially sustainable and SEWA Bank is having score less than the base year score, therefore vulnerable to un-sustainability.

As can also be seen from the Appendix J.1 and J.2 that young MFIs are having sustainability index of 74.3 for the year 2009-10 while the sustainability index of old MFIs is 69.8 for the same year which further validate the model as the performance of young MFIs have been better as compare to the old MFIs from our findings.

6. CONCLUSIONS AND RECOMMENDATIONS:

The previous studies had shown that the MFIs of Bangladesh have financially performed better as compare to Indian MFIs till 2007. But this study has proved that from last five years the Indian MFIs have performed better in most of the financial indicators.

For ensuring prudential management, banks in India are expected by the RBI to maintain Capital Adequacy Ratios (CAR - net worth as a proportion of risk weighted assets) of 9% and NBFCs of 15%. In case of Bangladesh MFIs the capital adequacy is higher than Indian MFIs therefore they are much safer in economic downturn. Indian MFIs have to increase their capital base so as to serve the large poor population. By 2007, the aggregate figures suggested that capital adequacy of Indian MFIs was an issue as even the largest MFIs were only just at acceptable levels and below the 12% norm being introduced then. The debt-equity ratios emerging were far higher than the 5:1 norm in such lending by commercial banks. However, from 2007 onwards, the private equity funds joined the microfinance focused social investment funds – Bellwether, Lok Capital, Unitus and others – in making investments in the Indian microfinance sector. Even the International Finance Corporation (IFC) became involved. As a result, the equity constraint eased considerably, particularly for start-up MFIs established by professionals and weighted average for Indian MFIs is now in excess of 15% – well ahead of the banking sector.

The conversion from NGO to NBFC will also enhance the capital adequacy for the sector.

In terms of outreach or the absolute number both the countries are at same level. But the growth rate of Indian MFIs is much higher (60% CAGR in the last five years) as compare to Bangladesh (stagnant). Though the market penetration is quite low in India particularly in UP, MP, Bihar, Orissa, Chhattisgarh, which shows that there is a huge business opportunities exist for Indian NBFC MFIs. Markets of Bangladesh are saturated and declining.

Bangladesh MFIs are better in reaching to women borrowers than Indian MFIs. Although both these countries have above 90% client as women borrowers

The Operating efficiency of Indian MFIs is better and increasing because of the higher growth in outreach and better utilization of manpower (the main operating expense of MFI). Despite the improvement in operating efficiency, the Yield of Indian MFIs is rising as compare to the counterparts in Bangladesh. This means that Indian Microfinance borrowers are now paying a relatively high cost for their microfinance loans. And at the same time there has been a substantial widening in the margin available to the average MFI for covering financial expenses, loan loss

provisions and surplus. The regulatory institution must keep a maximum limit of 20% to 24% on the interest charged by the MFIs. It must also fix up the interest margin of 10% over the cost of capital.

Portfolio quality in India (PAR>30 days = 2.4%) is far better than the Bangladesh of 12.1% and global median of 3.1%. This may be on account of 'ever-greening' resulting in under-reporting by branches to the head office. Following the Andhra Pradesh crisis of 2006, there has been a significant delinquency crisis in southern Karnataka since 2009 and growing issues with portfolio quality even in states like U.P. with relatively recent microfinance activity. Concerns about consumer protection have led to the state government of Andhra Pradesh stepping in with a heavy handed ordinance that threatens to bring all microfinance activity to a halt. While this crisis may blow over, greater introspection on issues of multiple lending, the quality of internal control systems, malpractices in loan collection and how to improve portfolio management are certainly called.

In case of Return on Asset and Operational Self Sufficiency indicator, No significant difference has been found between Indian MFIs and the MFIs of Bangladesh.

It can also be seen that the return on Equity of Indian MFIs is better than the MFIs of Bangladesh.

It has also been found that the MFIs, which are converting themselves into NBFC, are financially more viable and their outreach is also high.

Young MFIs of India are creating better quality asset and at a faster rate than mature and old MFIs.

Through the analysis of the second objective it was found that the outreach and capital adequacy is the prominent factors which are affecting the financial sustainability of MFIs. But the capital structure does not affect the sustainability. In case of Bangladesh, the Asset quality and capital adequacy is main factor which affect the sustainability of MFIs. Again the capital structure does not affect the sustainability of MFIs.

The third objective has suggested a new and comprehensive but simplified model for financial sustainability of micro-finance institutions. With the help of this model microfinance institutions can quantify the level of financial sustainability apart from checking whether they are financially sustainable or not. This model will also be used to create a sustainability index for various countries and help regulator identifying the strength and weak areas of the sector. In addition, the

existence of new model is also expected to facilitate MFIs to access to capital markets. Having access to sustainability information may reduce some of the transaction uncertainty.

While microfinance remains a small proportion of the overall financial system in terms of portfolio size, it is growing much faster; bank credit grew by 17.5% during 2008-09 while microfinance portfolios grew by around 100%. As a result, in terms of portfolio size as well as clients served it is becoming an increasingly significant part of the financial system

Deposit services remain a distant dream Thrift deposits are accepted formally by MFIs from their members and are recorded as part of their balance sheets wherever these are legally permitted. The magnitude of MFI deposit services in India is limited by the fact that not all MFIs are allowed by the regulator to offer such services.

Those registered as non-bank finance companies (NBFCs), regulated by the RBI, may offer such services only after obtaining an investment grade rating from a recognized corporate rating agency. Therefore a separate regulation is required to be implemented by the RBI to make the microfinance sector more cost effective.

Given recent actions by the Government of Andhra Pradesh, the media frenzy surrounding it and the expected deterioration in portfolio quality as a result, it is quite likely that there will be an increase in costs incurred by Indian MFIs to maintain lending standards while ensuring portfolio quality. At the same time, it is likely that the portfolio yield will decline in response to the political and media pressure on interest rates to end-clients. The implications of such drastic interventions by the government for the long term sustainability of microfinance institutions are difficult to predict. At best it will result in a decline in capital available for microfinance, thereby slowing down the financial inclusion effect of MFI operations; at worst it could destroy microfinance altogether, resulting in throwing low income families back into the not-so-benevolent arms of moneylenders.

7. CHAPTER PLAN:

The study is organized in following six chapters:

Chapter 1: Introduction

This chapter introduces the sustainability aspects of microfinance Institutions. It throws light on the purpose, objective, significance and the limitations of the study

Chapter 2: Literature Review

Chapter two reviews the theoretical and empirical literature in detail and discusses the various research studies on the topic under study.

Chapter 3: Overview of MFIs in India and Bangladesh

This chapter gives brief overview of the MFIs of India and Bangladesh and their role in the economy.

Chapter 4: Research Methodology

Chapter four traces the research methodology and discusses in detail the various models, tools and techniques used for analyzing the research objectives.

Chapter 5: Data analysis and Findings

This chapter covers the analysis of the financial data on microfinance Institutions of India and Bangladesh. It also covers the development of sustainability index model and provides the summary of the findings.

Chapter 6: Conclusions and Recommendations

This chapter summarizes and concludes the research. Areas for future research are also discussed in this chapter.

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APPENDIX-A:

A.1 Sample of Indian MFIs

S.N.	Sample of Indian MFIs	Inception	Legal Form
1	SEWA	1974	BANK
2	CRESA	1980	NGO
3	SKDRDP	1982	NGO
4	GRAMA VIDYALAY	1983	NGO
5	JANODAYA	1987	NGO
6	RASS	1989	NGO
7	GRAM UTTHAN	1990	NGO
8	ADHIKAR	1991	NBFC
9	ESAF	1992	NBFC
10	SHARE	1992	NBFC
11	AWS	1994	NGO
12	BSS	1994	NBFC
13	BISWA	1995	NGO
14	NDFS	1995	NGO
15	SANGMITRA	1995	NGO
16	SWAWS	1995	NGO
17	BASIX	1996	NBFC
18	NIDAN	1996	NGO
19	SARVODAYA NANO FINANCE	1996	NBFC
20	SKS MICROFINANCE	1997	NBFC
21	CASPHOR MC	1997	NGO
22	AMMACTS	1998	COP
23	SPANDANA	1998	NBFC
24	BFL	1999	NBFC
25	GFSPL	1999	NBFC
26	KBSLAB	1999	RB
27	ABCRDM	2002	NGO
28	AML	2002	NBFC
29	BANDHAN	2002	NBFC
30	SAADHAN	2002	NGO
31	NEED	2005	NGO
32	JFSL	2003	NGO

33	UJJIVAN	2004	NBFC
34	VFS	2006	NBFC
35	AROHAN	2006	NBFC
36	BJS	2006	NBFC
37	DISHA	2006	NGO
38	EQUITAS	2006	NBFC
39	GOF	2006	NBFC
40	ASHIRVAD	2007	NBFC

A.2 Sample of Bangladesh MFIs

S.N.	Sample of Bangladesh MFIs	Inception	Legal Form
1	BRAC	1972	NGO
2	RDRS	1972	NGO
3	CSS	1972	NGO
4	HEED	1974	NGO
5	BEES	1975	NGO
6	JCF	1976	NGO
7	ASA	1978	NGO
8	TMSS	1980	NGO
9	RIC	1981	NGO
10	RRF	1982	NGO
11	GRAMEEN BANK	1983	BANK
12	UDDIPAN	1984	NGO
13	ASOD	1985	NGO
14	PMUK	1986	NGO
15	POPI	1986	NGO
16	SSS	1986	NGO
17	SKS BANGLADESH	1987	NGO
18	DSK	1989	NGO
19	BURO BNGLADESH	1990	NGO
20	SHAKTI	1992	NGO
21	IDF	1993	NGO
22	SAJIDA	1993	NGO
23	ESDO	1993	NGO

24	CDIP	1995	NGO
25	BASTOB	1997	NGO
26	COAST TRUST	1998	NGO

APPENDIX-B:

B.1: Independent Samples t- Test

Levene's Test for Equality of Variances		**F**	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**
Active Borrower	Equal variances assumed	5.9	.016	2.02	197	.044	88.1	43.5
	Equal variances not assumed			2.01	98.51	.047	88.1	43.72
PAR	Equal variances assumed	23.7	.000	-4.2	230	.000	-7	1.68
	Equal variances not assumed			-4.0	119	.000	-7	1.76
ROA	Equal variances assumed	0.084	.77	0.103	248	.92	0.06	0.63
	Equal variances not assumed			0.103	245	.92	0.06	0.63
ROE	Equal variances assumed	4.35	.038	1.14	228	.25	11.7	10.1
	Equal variances not assumed			1.18	162	.23	11.7	9.8
OSS	Equal variances assumed	0.28	.6	0.46	232	.64	1.9	4.1
	Equal variances not assumed			0.46	231.6	.64	1.9	4.07
OELP	Equal variances assumed	9.8	.002	-5.71	230	.000	-5.25	0.92
	Equal variances not assumed			-5.74	180	.000	-5.25	0.91

BPSM	Equal variances assumed	27.1	.000	5.72	234	.000	127.08	22.19
	Equal variances not assumed			5.906	133.7	.000	127.08	21.51
CA	Equal variances assumed	14.7	.000	-3.8	239	.000	-7.02	1.81
	Equal variances not assumed			-3.8	206.7	.000	-7.02	1.83
Yield	Equal variances assumed	21.0	.000	-2.3	190	.019	-2.24	.95
	Equal variances not assumed			-2.4	189.5	.014	-2.24	.90
Women Borrowers	Equal variances assumed	27.4	.000	-1.0	240	.28	-1.32	1.25
	Equal variances not assumed			-1.1	177.5	.273	-1.32	1.20

APPENDIX-C:

C.1: Independent two sample t- test of NBFC and NGO of India:

Levene's Test for Equality of Variances		**F**	**Sig.**	**t**	**df**	**Sig. (2-tailed)**	**Mean Difference**	**Std. Error Difference**
OELP	Equal variances assumed	2.665	.105	3.652	158	.000	4.86030	1.33086
	Equal variances not assumed			3.677	123.347	.000	4.86030	1.32166
YIELD	Equal variances assumed	.736	.392	3.650	152	.000	4.67428	1.28045
	Equal variances not assumed			3.654	150.877	.000	4.67428	1.27922
PAR	Equal variances assumed	.479	.490	.517	178	.606	.27962	.54067
	Equal variances not assumed			.519	177.959	.604	.27962	.53888
ROA	Equal variances assumed	.317	.574	.208	170	.835	.15677	.75293

	Equal variances not assumed			.209	168.751	.834	.15677	.74883
ROE	Equal variances assumed	5.008	.027	1.013	170	.312	18.52123	18.27553
	Equal variances not assumed			.983	91.490	.328	18.52123	18.85095
OSS	Equal variances assumed	.052	.820	-.055	168	.956	-.27607	5.00482
	Equal variances not assumed			-.055	160.354	.956	-.27607	5.01639
ACTB	Equal variances assumed	5.344	.022	1.901	132	.059	134.32729	70.66559
	Equal variances not assumed			1.929	69.725	.058	134.32729	69.65144
WB	Equal variances assumed	3.283	.072	1.355	172	.177	2.21607	1.63572
	Equal variances not assumed			1.358	171.265	.176	2.21607	1.63151
CA	Equal variances assumed	7.883	.006	3.865	167	.000	8.41027	2.17574
	Equal variances not assumed			3.934	128.914	.000	8.41027	2.13769
BPSM	Equal variances assumed	.428	.514	.239	165	.811	8.33864	34.82790
	Equal variances not assumed			.238	155.883	.812	8.33864	35.02004

APPENDIX-D:

D.1: ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
Active borrower	Between Groups	75781.06	2	37890.532	6.241	.003
	Within Groups	843878.84	139	6071.071		
	Total	919659.90	141			
WB	Between Groups	1143.97	2	571.987	3.344	.037
	Within Groups	31814.23	186	171.044		
	Total	32958.20	188			
PAR	Between Groups	81.76	2	40.882	3.204	.043
	Within Groups	2258.64	177	12.761		
	Total	2340.40	179			
ROA	Between Groups	36.676	2	18.338	.755	.471
	Within Groups	4103.420	169	24.281		
	Total	4140.09	171			
ROE	Between Groups	11751.94	2	5875.972	.404	.668
	Within Groups	2441446.7	168	14532.421		
	Total	2453198.7	170			
OSS	Between Groups	5887.936	2	2943.968	2.972	.054
	Within Groups	178322.9	180	990.683		
	Total	184210.9	182			
OELP	Between Groups	1300.64	2	650.322	9.958	.000
	Within Groups	11036.75	169	65.306		
	Total	12337.394	171			
BPSM	Between Groups	390790.7	2	195395.355	4.245	.016
	Within Groups	8193432.2	178	46030.518		
	Total	8584222.9	180			
YIELD	Between Groups	700.280	2	350.140	6.049	.003
	Within Groups	9318.67	161	57.880		
	Total	10018.95	163			
C_A	Between Groups	2317.10	2	1158.551	6.089	.003
	Within Groups	34437.72	181	190.264		
	Total	36754.82	183			

APPENDIX-E:

E.1: Multiple Comparisons

Dependent Variable		(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
Active borrower	Tukey HSD	1	2	4.37770	15.59590	.958	-32.5703	41.3257
			3	-48.18099(*)	16.46299	.011	-87.1832	-9.1788
		2	1	-4.37770	15.59590	.958	-41.3257	32.5703
			3	-52.55870(*)	16.16480	.004	-90.8545	-14.2629
		3	1	48.18099(*)	16.46299	.011	9.1788	87.1832
			2	52.55870(*)	16.16480	.004	14.2629	90.8545
WB	Tukey HSD	1	2	5.82364(*)	2.33288	.036	.3119	11.3354
			3	1.68698	2.35918	.755	-3.8869	7.2608
		2	1	-5.82364(*)	2.33288	.036	-11.3354	-.3119
			3	-4.13665	2.30360	.174	-9.5792	1.3059
		3	1	-1.68698	2.35918	.755	-7.2608	3.8869
			2	4.13665	2.30360	.174	-1.3059	9.5792
PAR	Tukey HSD	1	2	.30342	.64293	.885	-1.2162	1.8230
			3	1.59180(*)	.66924	.048	.0100	3.1736
		2	1	-.30342	.64293	.885	-1.8230	1.2162
			3	1.28838	.64901	.119	-.2456	2.8224
		3	1	-1.59180(*)	.66924	.048	-3.1736	-.0100
			2	-1.28838	.64901	.119	-2.8224	.2456
ROA	Tukey HSD	1	2	.08523	.90278	.995	-2.0494	2.2199
			3	1.04865	.95310	.515	-1.2050	3.3023
		2	1	-.08523	.90278	.995	-2.2199	2.0494
			3	.96342	.91678	.546	-1.2043	3.1312
		3	1	-1.04865	.95310	.515	-3.3023	1.2050
			2	-.96342	.91678	.546	-3.1312	1.2043
ROE	Tukey HSD	1	2	-19.75045	22.08623	.645	-71.9771	32.4762
			3	-12.60993	23.43449	.853	-68.0248	42.8049
		2	1	19.75045	22.08623	.645	-32.4762	71.9771
			3	7.14052	22.55050	.946	-46.1840	60.4651

		3	1	12.60993	23.43449	.853	-42.8049	68.0248
			2	-7.14052	22.55050	.946	-60.4651	46.1840
OSS	Tukey HSD	1	2	-6.95013	5.66490	.439	-20.3378	6.4375
			3	6.78780	5.81996	.475	-6.9663	20.5419
		2	1	6.95013	5.66490	.439	-6.4375	20.3378
			3	13.73793(*)	5.63929	.042	.4108	27.0651
		3	1	-6.78780	5.81996	.475	-20.5419	6.9663
			2	-13.73793(*)	5.63929	.042	-27.0651	-.4108
OELP	Tukey HSD	1	2	.59256	1.48057	.916	-2.9083	4.0934
			3	-5.64248(*)	1.56310	.001	-9.3385	-1.9465
		2	1	-.59256	1.48057	.916	-4.0934	2.9083
			3	-6.23504(*)	1.50353	.000	-9.7902	-2.6799
		3	1	5.64248(*)	1.56310	.001	1.9465	9.3385
			2	6.23504(*)	1.50353	.000	2.6799	9.7902
BPSM	Tukey HSD	1	2	-89.31579	38.79414	.058	-181.0052	2.3736
			3	13.10375	40.01478	.943	-81.4706	107.6781
		2	1	89.31579	38.79414	.058	-2.3736	181.0052
			3	102.419(*)	38.61427	.024	11.1553	193.6838
		3	1	-13.10375	40.01478	.943	-107.6781	81.4706
			2	-102.419(*)	38.61427	.024	-193.6838	-11.1553
YIELD	Tukey HSD	1	2	2.82733	1.44095	.125	-.5814	6.2360
			3	-2.10973	1.51410	.347	-5.6915	1.4720
		2	1	-2.82733	1.44095	.125	-6.2360	.5814
			3	-4.93706(*)	1.43305	.002	-8.3271	-1.5471
		3	1	2.10973	1.51410	.347	-1.4720	5.6915
			2	4.93706(*)	1.43305	.002	1.5471	8.3271
C_A	Tukey HSD	1	2	-3.59726	2.47135	.315	-9.4375	2.2429
			3	-8.80966(*)	2.53961	.002	-14.8112	-2.8082
		2	1	3.59726	2.47135	.315	-2.2429	9.4375
			3	-5.21240	2.47135	.091	-11.0526	.6278
		3	1	8.80966(*)	2.53961	.002	2.8082	14.8112
			2	5.21240	2.47135	.091	-.6278	11.0526

*** The mean difference is significant at the .05 level**.

APPENDIX-F:

F.1: Financial Factors affecting Sustainability of Indian MFIs

F.1.1: Results of Linear Regression

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.729[a]	.531	.502	21.80319	2.113

a. Predictors: (Constant), Debt/Equity, PAR, BPSM, ACTB, WB, C_A, YIELD, ROE, OELP

b. Dependent Variable: OSS

F.1.2: ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76518.310	9	8502.034	17.885	.000[a]
	Residual	67503.808	142	475.379		
	Total	144022.119	151			

a. Predictors: (Constant), Debt/Equity, PAR, BPSM, ACTB, WB, C_A, YIELD, ROE, OELP

b. Dependent Variable: OSS

F.1.3: Coefficients (a)

	Un-standardized Coefficients		Standardized Coefficients			Co linearity Statistics	
Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
(Constant)	106.797	13.341		8.005	.000		
ACTB	6.743E-6	.000	.160	2.710	.008	.945	1.058
WB	-.086	.132	-.039	-.647	.519	.886	1.129
PAR	-.486	.485	-.059	-1.002	.318	.958	1.043
ROE	.034	.018	.139	1.915	.058	.624	1.603
BPSM	-.011	.009	-.080	-1.254	.212	.808	1.238
C_A	.705	.175	.275	4.026	.000	.705	1.419
YIELD	1.914	.276	.470	6.926	.000	.718	1.393
OELP	-2.789	.268	-.787	-10.417	.000	.578	1.731
Debt/Equity	.032	.043	.057	.740	.460	.564	1.773

a. Dependent Variable: OSS

APPENDIX-G:

G.1: Financial Factors affecting Sustainability of Bangladesh MFIs

Results of Linear Regression

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768(a)	.590	.540	20.97656

a Predictors: (Constant), Debt/Equity, ACTB, C_A, Inception, PAR, YIELD, OELP, WB

b Dependent Variable: OSS

ANOVA (b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	41748.144	8	5218.518	11.860	.000(a)
	Residual	29041.049	66	440.016		
	Total	70789.194	74			

a Predictors: (Constant), Debt/Equity, ACTB, C_A, Inception, PAR, YIELD, OELP, WB

b Dependent Variable: OSS

Coefficients (a)

Model		Un-standardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	70.949	682.482		.104	.918		
	Inception	.055	.351	.014	.158	.875	.744	1.344
	ACTB	5.01E-007	.000	.035	.381	.705	.730	1.370
	WB	-.835	.553	-.152	-1.510	.136	.612	1.634
	PAR	-.493	.164	-.290	-3.002	.004	.664	1.506
	OELP	-1.466	.598	-.235	-2.451	.017	.674	1.483
	C_A	.778	.193	.400	4.024	.000	.629	1.591
	YIELD	1.126	.643	.163	1.752	.084	.718	1.394
	Debt/Equity	.109	.223	.045	.488	.627	.737	1.358

a Dependent Variable: OSS

APPENDIX-H:

H.1: Common measures of Financial Performance used by different agencies

Indicators	ACCION	MIX	Planet Rating	SEEP Network	WOCCU	WWB
OUTREACH						
1. No. of Active borrowers		YES		YES	YES	YES
2. No. of women borrowers		YES				YES
PORFOLIO QUALITY						
1. Repayment rate						YES
2. Portfolio at risk	YES	YES	YES	YES	YES	YES
3. Arrears rate				YES	YES	
4. Loan Loss Rate	YES		YES	YES		
5. Loan loss provision rate	YES	YES		YES	YES	YES
PRODUCTIVITY						
1. No. of loan per credit officer		YES		YES		YES
2. Amount of loan per credit officer				YES		YES
3. Ratio of credit officer to total staff	YES	YES	YES			
EFFICIENCY						
1. Cost per borrower		YES		YES		YES
2. Cost per unit of money lent	YES	YES		YES		YES
3.Operational efficiency	YES	YES	YES	YES	YES	
4. Administrative efficiency		YES	YES			
SUSTAINABILITY						
1. Operational sustainability		YES	YES	YES		YES
2. Financial sustainability		YES	YES	YES		YES
PROFITABILTY						
1. Return on assets	YES	YES	YES	YES	YES	YES
2. Return on equity	YES	YES	YES		YES	
3. Yield on Portfolio		YES			YES	YES

APPENDIX-I:

I.1: Financial Sustainability Index for Indian Microfinance Institutions

SN	MFIs	CA	CA (Score)	OELP	OELP (Score)	PAR	PAR (Score)	OSS	OSS (Score)	GLP (Million $)	Weight	Weighted Score
1	SKS	23.7	23.7	10.1	89.9	0.22	99.78	150	75	960	0.28	76.03
2	SPANDANA	16.7	16.7	5.4	94.6	0.13	99.87	180	90	787	0.23	78.96
3	SHARE	11.3	11.3	8.2	91.8	0.16	99.84	154	77	376	0.11	74.36
4	BANDHAN	10.45	10.45	5.43	94.57	0.13	99.87	158	79	332	0.10	75.33
5	AML	11.1	11.1	6.34	93.66	0.77	99.23	146	73	315	0.09	73.77
6	BASIX	14.1	14.1	15.9	84.1	2.5	97.5	114	57	172	0.05	68.00
7	SKDRDP	4.8	4.8	4.8	95.2	0.31	99.69	112	56	136	0.04	69.42
8	EQITAS	36.5	36.5	8.1	91.9	0.11	99.89	145	72.5	134	0.04	78.75
9	GV	12	12	11.8	88.2	0	100	125	62.5	134	0.04	70.58
10	UJJIVAN	25.9	25.9	19	81	0.46	99.54	116	58	82	0.02	70.53
	Total									3428	1.00	
										S. Index (2010):		75.34

APPENDIX-J:

J.1 Financial Sustainability Index for Young MFIs of India

SN	Young MFIs	GLP Million $	Weight	CA	CA (Score)	OELP	OELP (Score)	PAR	PAR (Score)	OSS	OSS (Score)	Sustain. Score
1	ABCRDM	2.5	0.004	11.1	11.1	6.3	93.7	0.33	99.67	146	73	73.92
2	AML	315	0.521	10.4	10.4	5.4	94.6	0.13	99.87	158	79	75.33
3	Equitas	134	0.222	36.4	36.4	8	92	0.1	99.9	145	72.5	78.76
4	Saadhan	14	0.023	11	11	9.9	90.1	1.9	98.1	113	56.5	68.99
5	Need	4.4	0.007	7	7	17.3	82.7	1.1	98.9	106	53	65.75
6	JFSL	7.7	0.013	25.9	25.9	18.9	81.1	0.46	99.54	116	58	70.56
7	UJJIVAN	82	0.136	12.36	12.36	13.13	86.87	0.6	99.4	110	55	68.54
8	VFS	23	0.038	13.7	13.7	13	87	0.8	99.2	115	57.5	69.32
9	Arohan	21.7	0.036	3.9	3.9	17.4	82.6	0.2	99.8	105	52.5	65.26
10	BJS	0.5	0.001	36.4	36.4	8	92	0.1	99.9	145	72.5	78.76
	Total	604.8	1							S. Index (2010):		74.30

J.2 Financial Sustainability Index for Old MFIs of India

SN	Old MFIs	GLP Million $	Weight	CA	CA (Score)	OELP	OELP (Score)	PAR	PAR (Score)	OSS	OSS (Score)	Sustain. Score
1	SEWA	10	0.026	17.21	17.21	15.6	84.4	17.5	82.5	107	53.5	63.19
2	CReSA	5.5	0.014	23.2	23.2	12.6	87.4	0	100	109	54.5	71.04
3	SKDRDP	136	0.352	4.8	4.8	4.7	95.3	0.31	99.69	112	56	69.45
4	GV	134	0.347	12	12	11.26	88.74	0	100	125	62.5	70.72
5	Janodaya	1.5	0.004	15.9	15.9	16.3	83.7	25	75	103	51.5	59.92
6	RASS	15	0.039	15.1	15.1	2	98	0.3	99.7	144	72	75.68
7	GU	9	0.023	5.6	5.6	5.9	94.1	1.9	98.1	101	50.5	67.64
8	Adhikar	9	0.023	12.3	12.3	9.6	90.4	0.8	99.2	115	57.5	69.91
9	ESAF	34	0.088	18	18	13.7	86.3	0.93	99.07	103	51.5	68.74
10	BSS	32	0.083	15.7	15.7	11	89	1.8	98.2	105	52.5	68.89
	Total	386	1							S. Index (2010):		69.81